

## REMARKS

### *The Pending Claims*

Currently pending are claims 101, and 115-118 and 121-126.

### *Summary of the Office Action*

In the Office Action dated March 5, 2008 (hereinafter “the Office Action”) the examiner rejected claims 101, 115-118, 121, 123, and 126 under 35 U.S.C. 103(a) as obvious over US4,837,020 to Mise et al. (“Mise”) in view of US5,188,064 to House (“House”); Claim 119 stands rejected as obvious over Mise in view of House and further in view of US4,957,063 to Heitfeld et al. (“Heitfeld”).

### *Discussion of the Prior Art Rejection*

With respect to claims 101, 115-118, 121, 123, and 126, the examiner states on page 3 of the Office Action:

**Mise discloses a deodorant composition comprising (a) D-glucosaccharoascorbic acid and (b) a ferrous compound and/or a cupric compound...components (a) and (b)...may be used as support on a porous material such as activated carbon and activated alumina. Deposition on such a porous material can be accomplished by preparing a solution of the deodorant composition, impregnating the porous material with a solution and drying the same.**

Applicants respectfully submit that Mise does not disclose activated alumina particles having pores and fissures to provide odor absorption ability in animal litter. The pores and fissures in the non-impregnated activated alumina claimed by applicants are available for odor absorption. Activated alumina that has been impregnated with chemical substances as in Mise does not have pores and fissures available for odor absorption to the same degree, if at all, as non-impregnated activated alumina.

Mise discloses:

**The offensive and foreign odors ...generally originate from various installations such as a raw sewage disposal plant, animal pen, fish meat packing plant, etc. or form the water closet, dust bin, refrigerator, and so on. (col. 1, lines 4-7)**

One of the present inventors who was undertaking a research for the synthesis of L-ascorbic acid, D-erythorbic acid and their related compounds found that treating 2-keto-D-glucaric acid or its 2,3-O-acetal with an acid yields D-glucosaccharoascorbic acid, a novel compound (European Patent Application Publication No. 0228273, Pub. date 1987. 7. 8.) Paying attention to the structural feature that unlike L-ascorbic acid or D-erythorbic acid, this new compound has a carboxyl group within its molecule, the present inventors sought for the development of new uses for the compound and found that a composition obtainable by adding a ferrous compound or a cupric compound to D-glucosaccharoascorbic acid has an excellent deodorant action. It was also found that this composition exhibits stable effects in a broader range of the ratio of the two ingredients. The present invention has been accomplished on the basis of the above findings. (col. 1, lines 41-58; *emphasis added*)

A deodorant composition comprising (a) D-glucosaccharoascorbic acid and (b) a ferrous compound and /or a cupric compound...  
(Abstract)

First, Mise does not specifically disclose an animal litter composition or a deodorizing composition that could be used in conjunction with an animal litter.

Second, applicants stress that Mise discloses a deodorant composition comprising (a) D-glucosaccharoascorbic acid and (b) a ferrous compound and /or a cupric compound. Thus, the alumina disclosed in Mise is functionally different than the alumina claimed by applicants. The activated alumina disclosed in Mise does not provide any deodorizing effect, but rather is merely present as a means to support (i.e., contain) the two actively deodorizing components (a) and (b). Mise discloses activated alumina that is impregnated with a deodorant composition comprising (a) and (b) and it is that deodorizing composition that provides a deodorizing effect. Nothing in Mise teaches or suggests that activated alumina could be used alone (i.e., non-impregnated) to provide an odor absorbing benefit to an animal litter.

On page 4 of the Office Action, the examiner states:

It would have been obvious...to [incorporate] the clays of House into the composition taught by Mise in order to eliminate or reduce the odors associated with animal urine and to provide a clumping sorbent having superior sorption capacity and sufficient cohesiveness when wetted with an aqueous liquid, such as urine, to be easily separated from the nonwetted sorbent particles.

Furthermore, Mise discloses that a solid deodorant product can be formed by impregnating porous activated alumina with the D-glucosaccharoascorbic acid and ferrous and/or cupric compounds. In other words the D-glucosaccharoascorbic acid and ferrous and/or cupric compounds are deposited into the pores of the activated alumina. Mise also discloses that a liquid deodorant composition can be formed by preparing an aqueous solution or dispersion of D-glucosaccharoascorbic acid and ferrous and/or cupric compounds. The resulting deodorant composition comprising D-glucosaccharoascorbic acid and ferrous and/or cupric compounds provides "excellent deodorant effects by removing the offensive and foreign odors rapidly" (abstract; col. 2, lines 31-39). Thus, since the deodorant composition can be either a solid or a liquid and the liquid does not contain activated alumina, it is the presence of the D-glucosaccharoascorbic acid and ferrous and/or cupric compounds that provide the odor control, not the activated alumina.

Third, applicants stress that Mise discloses that the odor-absorbing efficacy of the activated alumina alone is not sufficient to provide excellent deodorant effects:

**TABLE I**

		Gas permeability rates (%) of deodorant compositions (Samples A through E)					
		Time					
Sam- ple	Malodorous substances	Ini- tial	2	4	8	16	32
		(hrs)					
A	Ammonia	0	0	0	15	80	96
	Hydrogen sulfide	76	76	76	75	72	70
	Methylmercaptan	91	91	90	90	85	82
B	Ammonia	0	0	0	31	85	100
	Hydrogen sulfide	100	75	87	82	75	73
	Methylmercaptan	100	95	90	84	72	63
C	Ammonia	0	0	0	0	25	80
	Hydrogen sulfide	92	88	83	79	79	78
	Methylmercaptan	100	90	84	80	80	80
D	Ammonia	0	0	60	80	90	100
	Hydrogen sulfide	100	90	96	90	90	88
	Methylmercaptan	100	95	97	95	90	90
E	Ammonia	20	70	90	97	98	98
	Hydrogen sulfide	95	95	95	95	96	98
	Methylmercaptan	100	97	100	100	100	100

(Col. 4, Table I)

Specifically, Table I shows the measured gas permeability rates (%) of deodorant compositions supported on activated alumina (Samples A-D) and of activated alumina alone (Sample E). Applicants respectfully submit that Mise clearly teaches away from the use of activated alumina in the manner claimed by applicants because compared to the impregnated Samples A-D, the non-impregnated Sample E exhibits far greater gas permeability rates for offensive and foreign odors.

In summary, applicants claim the odor-absorbing properties of activated alumina having pores and fissures in animal litter and, more specifically, that the porous and fissurous structure of the activated alumina provides the odor absorption. It is submitted that impregnating activated alumina with (a) D-glucosaccharoascorbic acid and (b) ferrous and/or cupric compounds, precludes the activated alumina from absorbing any additional odors. Thus, the odor controlling activity disclosed and taught in Mise is attributable to the combination of D-glucosaccharoascorbic acid and ferrous and/or cupric compounds, not the activated alumina. This is further evidenced by the fact that activated alumina is but one support material disclosed. Others include paper, cloth, nonwoven fabric, and plastic film. (col. 2, lines 50-63)

On page 6 of the Office Action, the examiner states:

**Additionally, it is the position of the examiner that the activated alumina would possess the same functional properties as the instant claims, baring a showing to the contrary.**

Applicants submit that the examiner has failed to articulate a reason why this would be the case. As was previously discussed, Mise did not disclose, teach or suggest that activated alumina could be used as an odor controlling agent in animal litter. Furthermore, as previously discussed, Mise affirmatively taught away from this use by showing in Table 1 that the activated alumina alone did not exhibit much odor-absorbing capability, particularly as compared with activated alumina impregnated with (a) D-glucosaccharoascorbic acid and (b) ferrous and/or cupric compounds. As previously discussed, the activated alumina disclosed in Mise is structurally different than that claimed by applicants and therefore no reason can be articulated to expect that the alumina disclosed in Mise would possess the same functional properties as the activated alumina in applicants' claims.

On page 6 of the Office Action, the examiner states:

**Applicant is claiming a composition, and therefore, the intended function of the composition does not hold patentable weight.**

Applicants respectfully disagree. There is ample precedent to establish that functional limitations are appropriate in claims and should be afforded patentable weight by the examiner in the obviousness determination. Applicants draw the examiner's attention to *In re Swinehart*, 439 F.2d 210, 169 USPQ 226 (C.C.P.A. 1971). "We take the characterization 'functional', as used by the Patent Office and argued by the parties, to indicate nothing more than the fact that an attempt is being made to define something (in this case, a composition) by what it *does* rather than by what it *is* (as evidenced by specific structure or material, for example). In our view, there is nothing intrinsically wrong with the use of such a technique in drafting patent claims. Indeed we have even recognized in the past the practical *necessity* for the use of functional language." See *In re Swinehart*, 169 USPQ 226 at 228 (*emphasis in original*). Thus, applicants urge the examiner to give patentable weight to all the claim limitations, particularly the claim limitation that the porous and fissurous structure of the alumina provides odor absorption.

In summary, it is submitted that Mise does not disclose, teach or suggest the use of activated alumina as an odor-absorbing component of an animal litter. Furthermore, it is submitted that Mise does not disclose, teach or suggest the activated alumina claimed by applicants, i.e., odor-absorbing activated alumina particles having pores and fissures wherein the porous and fissurous structure of the activated alumina provides odor absorption.

### CONCLUSION

In view of the remarks above, the claims are believed to be in condition for allowance. An early and favorable consideration of this Response is earnestly and respectfully solicited. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

In the unlikely event that the Patent Office determines that an extension and/or other relief is required as a result of this statement, Applicants petition for any required relief including extensions of time and authorize the Assistant Commissioner to charge the cost of such petitions and/or other fees due to our Deposit account number 032270. However, the Assistant Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Respectfully submitted,

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